MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2022/2023

PBC0016–BASIC COMPUTING AND PROGRAMMING

(Foundation in Engineering)

6 OCTOBER 2023
9.00 a.m. - 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **FOUR** printed pages with **FOUR** questions.
2. Answer **ALL** questions.
3. Write your answers in the Answer Booklet.

Question 1 (25 marks)

(a) Compare **TWO (2)** differences between a desktop operating system and a mobile operating system. Give an example for each type of operating system. [4+2 marks]

(b) Describe a supercomputer and briefly describe the type of applications that may require the use of a supercomputer. Your answer must include the features of a supercomputer and what it is capable of. [6 marks]

(c) What is a mobile device? Name **THREE (3)** examples of a mobile device that is used by a student. [2+3 marks]

(d) Describe the **FOUR (4)** steps involved in a machine cycle. [8 marks]

Question 2 (25 marks)

(a) Compare **TWO (2)** differences between twisted-pair cable and coaxial cable. [4 marks]

(b) Briefly describe the difference between a local area network, a metropolitan area network, a wide area network and a personal area network. Your answer must include the definition of each network. [8 marks]

(c) A bus topology is a type of network topology.
(i) Describe how a bus topology works with a suitable illustration. [3 marks]
(ii) What are the **TWO (2)** advantages of a bus network topology? [4 marks]
(iii) What happens to the bus network when one of the devices in the bus topology fails? [2 marks]

(d) Is it important to have network standards? Describe **ONE (1)** reason to support your answer. [1+3 marks]

Question 3 (25 marks)

(a) What is the most basic element of multimedia? Name **THREE (3)** parts where it is being used in a website. [1+3 marks]

(b) Define the term graphics. [2 marks]

(c) What is anti-aliased technique? What will happen to the file size when anti-aliased technique is used? [2+2 marks]

(d) Describe a network communication standard that can be used in a highway toll collection system. Your answer must include how the toll collection system works. [1+6 marks]

Continued...

Question 3 (Continued...)

(e) Name **THREE (3)** types of digital multimedia software. [3 marks]

(f) Is augmented reality and virtual reality the same? Justify your answer by giving the definition of augmented reality and virtual reality. [5 marks]

Question 4 (25 marks)

(a) Identify and correct **FIVE (5)** errors in the C code listed below. The correct program will print out the following output. [5 marks]

```
Please enter your ID number:
1221109909
Your ID number is 1221109909.
```

```
#include <studio.h>
int main()
{

int ID number;

printf("Please enter your ID number:");
scanf("%c", &number);

printf("Your ID number is %f.", number);

return 0;
}
```

(b) Let `a` and `b` be the variables in a C program code with the values of `a = 5` and `b = 7`. Using the two variables `a` and `b`, write the C statement with the correct syntax to print the following output. You may use the variables more than once. You do not have to write a complete C program.

[6 marks]

(i) 12
(ii) 35
(iii) 7 – 5 = 2

(c) Using while statement, write a complete C program that prints out the following output. [4 marks]

```
1000    200    40    8
```

Continued...

Question 4 (Continued...)

(d) An online shopping platform is offering a discount of 10% if the user spends RM200 and above in its platform and a discount of 20% if the user spends RM500 and above.

Write a complete C program that requests the user to enter the amount spent and display the total amount to pay after the discount (if eligible). Both the amount spent and the total amount to pay should be in a floating point data type. The program should display 'There is no discount for you' if the amount spent is less than RM 200. Figure Q4 shows the sample outputs.

[10 marks]

```
What is the amount spent? RM 250
The total amount to pay after the discount is RM 225.000000
```

```
What is the amount spent? RM 600
The total amount to pay after the discount is RM 540.000000
```

```
What is the amount spent? RM 150
There is no discount for you.
```

Figure Q4: Sample Outputs (**Bold and underlined** represents the user's input)

End of Paper